Exercise 2.9 —

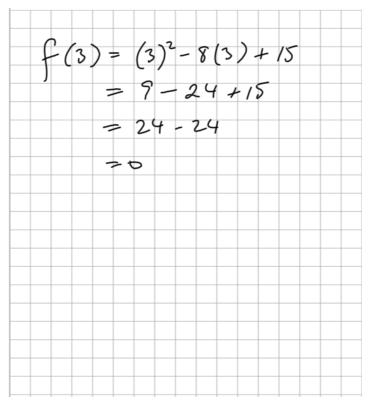
1. Show that (x-3) is a factor of $x^2 - 8x + 15$.

$$f(x-3)$$
 is factor

 $\Rightarrow x=3$ is

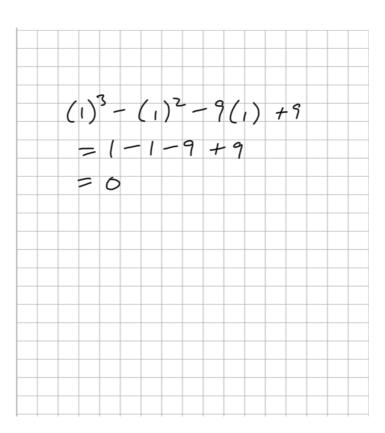
Solution

 $\Rightarrow f(3)=0$

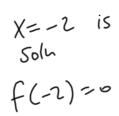


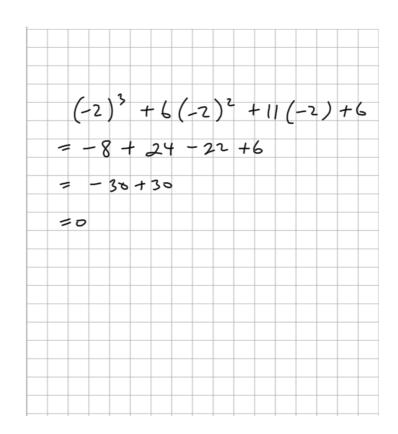
2. Show that (x - 1) is a factor of $x^3 - x^2 - 9x + 9$.

$$X=1$$
 is solu
$$f(1)=0$$



3. Show that (x + 2) is a factor of $x^3 + 6x^2 + 11x + 6$.

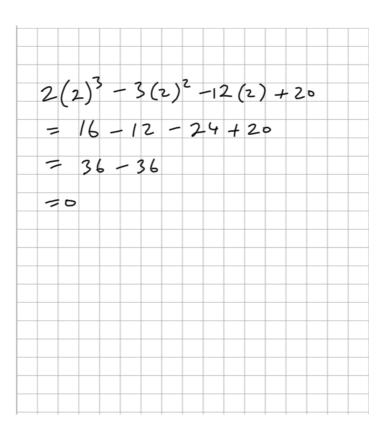




4. Show that (x-2) is a factor of $2x^3 - 3x^2 - 12x + 20$.

Soly
$$x=2$$

 $f(z)=0$



5. Investigate if (x-2) is a factor of $x^3 - 5x^2 + 8x - 4$.

f(2)=0

(2)5	$-5(2)^2+8(2)-4$	
=	8-20+16-4	
=	-24 +24	
=0	yes is factor	

6. Show that (2x - 1) is a factor of $2x^3 + 7x^2 + 2x - 3$.

IF

2×-1	= 0
2x=1	
x = 1,	2
2 (\(\)	+7(2)2+2(2)-3
= 8 1	+ 7 + 1 - 3
= 3 -	- 3
70	QED

7. Investigate if (2x + 1) is a factor of $2x^3 - x^2 - 5x - 2$.